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I CLAIM:

✓ 1. A switch for use with a packet network, said switch comprising:

a) an input for receiving first packets from at least one communication link, each of said first packets including a source address;

b) a shuffling unit for processing said first packets, said shuffling unit operative to extract data from said first packets and generate second packets at least partly on a basis of the source address of said first packets, said shuffling unit releasing said second packets to the packet network;

c) a switching unit for receiving third packets from the packet network, said switching unit operative to perform switching of said third packets for establishing at least one communication session.

✓ 2. A switch as defined in claim 1, wherein each of said first, second and third packets includes a source address, a destination address and at least one data segment.

(0') 3. A switch as defined in claim 2, wherein the packet network interconnects said switch with a plurality of remote switches, said third packets including second packets generated by the shuffling units of the plurality of remote switches.

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4. A switch as defined in claim 3, wherein said third packets include the second packets generated by the shuffling unit of said switch.

5. A switch as defined in claim 4, wherein said shuffling unit includes a first data structure mapping each data segment of each of said first packets to a destination address, said shuffling unit operative to consult said first data structure for generating said second packets.

6. A switch as defined in claim 5, wherein said shuffling unit generates a second packet for each destination address contained in said first data structure.

7. A switch as defined in claim 6, wherein when said shuffling unit generates a second packet having a particular destination address, said shuffling unit uses all of the first packet data segments mapped to the particular destination address in said first data structure.

8. A switch as defined in claim 7, wherein said switching unit includes a second data structure mapping each data segment of each of said third packets to at least one other data segment of said third packets, said switching unit operative to establish said at least one communication session on a basis of said second data structure.

9. A switch as defined in claim 8, wherein, upon establishing a communication session, said switching unit is operative to extract data from said third packets and generate fourth packets on a basis of said

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second data structure, said switching unit releasing said fourth packets to the packet network.

10. A switch as defined in claim 9, wherein said shuffling unit receives fourth packets from the packet network, said shuffling unit being operative to extract data from said fourth packets and generate fifth packets, said shuffling unit transmitting said fifth packets to at least one communication link.

11. A switch as defined in claim 10, wherein said shuffling unit includes a third data structure mapping each data segment of each of said fourth packets to a destination address, said shuffling unit operative to consult said third data structure for generating said fifth packets.

12. A switch as defined in claim 11, wherein said shuffling unit generates a fifth packet for each destination address contained in said third data structure.

13. A switch as defined in claim 12, wherein said input is a first input, said switch including a second input for receiving control information, said first, second and third data structures being dynamically updated by said control information.

14. A switch as defined in claim 12, wherein said first, second, third, fourth and fifth packets include data signals.

15. A switch as defined in claim 12, wherein said first, second, third, fourth and fifth packets include voice signals.

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16. A switch as defined in claim 12, wherein said first, second, third, fourth and fifth packets include data and voice signals.

17. A switch as defined in claim 1, wherein the communication session is a telephone call between two parties.

18. A switch as defined in claim 1, wherein the communication session is a conference call between multiple parties.

19. A switch as defined in claim 1, wherein the communication session is a page broadcast.

20. A switch comprising:

a) a shuffling unit receiving first packets including a source address from at least one communication link, said shuffling unit operative to extract data from said first packets and generate second packets at least partly on a basis of the source address of said first packets, said shuffling unit transmitting each of said second packets to one of a first set of remote devices;

b) a switching unit for receiving third packets from at least one of a second set of remote devices, said switching unit operative to perform switching of said third packets for establishing at least one communication session.

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107   21.   A switch as defined in claim 20, wherein said first set
of remote devices includes said switching unit.

107   22.   A switch as defined in claim 21, wherein said second set
of remote devices includes said shuffling unit.

107   23.   A switch as defined in claim 22, wherein said first set
of remote devices includes the switching units of a set
of remote switches. 112

107   24.   A switch as defined in claim 23, wherein said second set
of remote devices includes the shuffling units of the
set of remote switches. 112

25.   A switch as defined in claim 20, wherein said first,
second and third packets include data signals.

26.   A switch as defined in claim 20, wherein said first,
second and third packets include voice signals.

27.   A switch as defined in claim 20, wherein said first,
second and third packets include data and voice signals.

28.   A   switch   as   defined   in   claim   20,   wherein   the
communication session is a telephone call between two
parties.

29.   A   switch   as   defined   in   claim   20,   wherein   the
communication session is a conference call between
multiple parties.

30.   A   switch   as   defined   in   claim   20,   wherein   the
communication session is a page broadcast.

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✓ 31.   A device for establishing communication sessions in a
        communications system including a packet network, said
        device comprising:

        a)   a shuffler for receiving first packets including a
             source address from at least one communication
             link, said shuffler operative to extract data from
             said first packets and generate second packets at
             least partly on a basis of the source address of
             said first packets, said shuffler releasing said
             second packets to the packet network;

        b)   a switch for receiving third packets from the
             packet network, said switch operative to perform
             switching of said third packets for establishing at
             least one communication session.

✓ 32.   A device as defined in claim 31, wherein each of said
        first, second and third packets includes a source
        address, a destination address and at least one data
        segment.

(0) 33. A device as defined in claim 32, wherein the packet
        network interconnects said device with a plurality of
        remote devices, said third packets including second
        packets generated by the shufflers of the plurality of
        remote devices.

(5) 34. A device as defined in claim 33, wherein said third
        packets include the second packets generated by the
        shuffler of said device.

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A 35. A device as defined in claim 34, wherein said shuffler includes a first data structure mapping each data segment of each of said first packets to a destination address, said shuffler operative to consult said first data structure for generating said second packets.

36. A device as defined in claim 35, wherein said shuffler generates a second packet for each destination address contained in said first data structure.

37. A device as defined in claim 36, wherein when said shuffler generates a second packet having a particular destination address, said shuffling unit uses all of the first packet data segments mapped to the particular destination address in said first data structure.

38. A device as defined in claim 37, wherein said switch includes a second data structure mapping each data segment of each of said third packets to at least one other data segment of said third packets, said switch operative to establish said at least one communication session on a basis of said second data structure.

39. A device as defined in claim 38, wherein, upon establishing a communication session, said switch is operative to extract data from said third packets and generate fourth packets on a basis of said second data structure, said switch releasing said fourth packets to the packet network.

40. A device as defined in claim 39, wherein said shuffler receives fourth packets from the packet network, said shuffler being operative to extract data from said

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fourth packets and generate fifth packets, said shuffler transmitting said fifth packets to at least one communication link.

41. A device as defined in claim 40, wherein said shuffler includes a third data structure mapping each data segment of each of said fourth packets to a destination address, said shuffler operative to consult said third data structure for generating said fifth packets.

42. A device as defined in claim 41, wherein said shuffling unit generates a fifth packet for each destination address contained in said third data structure.

43. A device as defined in claim 42, wherein said device includes an input for receiving control information, said first, second and third data structures being dynamically updated by said control information.

44. A device as defined in claim 42, wherein said first, second, third, fourth and fifth packets include data signals.

45. A device as defined in claim 42, wherein said first, second, third, fourth and fifth packets include voice signals.

46. A device as defined in claim 42, wherein said first, second, third, fourth and fifth packets include data and voice signals.

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47. A device as defined in claim 31, wherein the communication session is a telephone call between two parties.

48. A device as defined in claim 31, wherein the communication session is a conference call between multiple parties.

49. A device as defined in claim 31, wherein the communication session is a page broadcast.

50. A machine readable storage medium containing a program element for execution by a computing apparatus to implement a switch, said switch comprising:

   a) an input for receiving first packets from at least one communication link, each of said first packets including a source address;

   b) a shuffling unit for processing said first packets, said shuffling unit operative to extract data from said first packets and generate second packets at least partly on a basis of the source address of said first packets, said shuffling unit transmitting each of said second packets to one of a first set of remote devices;

   c) a switching unit for receiving third packets from at least one of a second set of remote devices, said switching unit operative to perform switching of said third packets for establishing at least one communication session.

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(07) 51. A machine-readable storage medium as defined in claim 50, wherein said first set of remote devices includes said switching unit.

(07) 52. A machine-readable storage medium as defined in claim 51, wherein said second set of remote devices includes said shuffling unit.

(07) 53. A machine-readable storage medium as defined in claim 52, wherein said first set of remote devices includes the switching units of a set of remote switches. (12

(07) 54. A machine-readable storage medium as defined in claim 53, wherein said second set of remote devices includes the shuffling units of the set of remote switches. (12

55. A method for establishing communication sessions in a communication system including a packet network, said method comprising:

a) receiving first packets including a source address from at least one communication link;

b) implementing a shuffling stage for:

i) extracting data from the first packets;

ii) shuffling the data extracted from the first packets for generating second packets at least partly on a basis of the source addresses of the first packets;

iii) releasing the second packets to the packet network;

c)   implementing a switching unit for:

    i.)   receiving third packets from the packet network;

    ii)   switching the third packets for establishing at least one communication session.

56.   A method as defined in claim 55, wherein each of said first, second and third packets includes a source address, a destination address and at least one data segment.

57.   A method as defined in claim 56, wherein said shuffling unit includes a first data structure mapping each data segment of each of said first packets to a destination address, said shuffling unit operative to consult said first data structure for generating said second packets.

58.   A method as defined in claim 57, wherein said shuffling unit generates a second packet for each destination address contained in said first data structure.

59.   A method as defined in claim 58, wherein when said shuffling unit generates a second packet having a particular destination address, said shuffling unit uses all of the first packet data segments mapped to the particular destination address in said first data structure.

60.   A method as defined in claim 59, wherein said switching unit includes a second data structure mapping each data segment of each of said third packets to at least one

other data segment of said third packets, said switching unit operative to establish said at least one communication session on a basis of said second data structure.

61. A method as defined in claim 60, further comprising the step of dynamically updating said first and second data structures.

62. A method as defined in claim 61, wherein said first, second and third packets include data signals.

63. A method as defined in claim 61, wherein said first, second and third packets include voice signals.

64. A method as defined in claim 61, wherein said first, second and third packets include data and voice signals.

65. A method as defined in claim 55, wherein the communication session is a telephone call between two parties.

66. A method as defined in claim 55, wherein the communication session is a conference call between multiple parties.

67. A method as defined in claim 55, wherein the communication session is a page broadcast.

68. A method as defined in claim 55, wherein the communication system is a data system.

69. A method as defined in claim 55, wherein the communication system is a voice system.

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70. A method as defined in claim 55, wherein the communication system is a data and voice system.

71. In a communication system encompassing a plurality of switches, each switch having a shuffling unit and a switching unit:

    a)   the set of shuffling units being operative to:

        i)   receive first packets including a source address from respective communication links;

        ii)   extract data from the first packets for generating second packets at least partly on a basis of the source address of the first packets;

        iii)   transmit each of the second packets to one of the switching units of the plurality of switches;

    b)   the set of switching units being operative to:

        i)   receive third packets from at least one of the shuffling units of the plurality of switches;

        ii)   switch the third packets for establishing at least one communication session.

72. A communication system for establishing communication sessions, said communication system comprising:

    a)   a packet network;

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b)   a plurality of switches, each of said switches
including:

i)   a shuffling unit for receiving first packets
including a source address from a respective
communication link, said shuffling unit
operative to extract data from said first
packets and generate second packets at least
partly on a basis of the source address of
said first packets, said shuffling unit
releasing said second packets to the packet
network;

ii)   a switching unit for receiving third packets
from the packet network, said switching unit
operative to perform switching of said third
packets for establishing at least one
communication session.

(0) 73. A communication system as defined in claim 72, wherein
the switching units of said plurality of switches form a
set of remote switching units and the shuffling units of
said plurality of switches form a set of remote
shuffling units.

(0) 74. A communication system as defined in claim 73, wherein
said shuffling unit transmits said second packets over
the packet network to one of the set of remote switching
units.

(0) 75. A communication system as defined in claim 74, wherein
said third packets are second packets sent over the

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packet network by at least one of the set of remote shuffling units.

76.   A communication system for establishing communication sessions, said communication system comprising:

a)   a packet network;

b)   at least one shuffler, said shuffler receiving first packets including a source address from a respective communication link, said shuffler being operative to extract data from said first packets and generate second packets at least partly on a basis of the source address of said first packets, said shuffler transmitting said second packets to the packet network;

c)   at least one switch, said switch receiving third packets from the packet network and being operative to perform switching of said third packets for establishing at least one communication session.

77.   A communication system as defined in claim 76, wherein said communication system includes a plurality of shufflers and a plurality of switches, each shuffler transmitting said second packets over the packet network to one of said plurality of switches.

78.   A communication system as defined in claim 77, wherein said third packets are second packets sent over the packet network by at least one of said shufflers.

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✓ 79. A switch for use with a packet network, said switch comprising:

    a)   input means for receiving first packets from at least one communication link, each of said first packets including a source address;

    b)   shuffling means for processing said first packets to extract data from said first packets and generate second packets at least partly on a basis of the source address of said first packets, said shuffling means releasing said second packets to the packet network;

    c)   switching means for receiving third packets from the packet network, said switching means operative to perform switching of said third packets for establishing at least one communication session.

✓ 80. A switch comprising:

    a)   shuffling means receiving first packets including a source address from at least one communication link, said shuffling means operative to extract data from said first packets and generate second packets at least partly on a basis of the source address of said first packets, said shuffling means transmitting each of said second packets to one of a first set of remote devices;

    b)   switching means for receiving third packets from at least one of a second set of remote devices, said switching means operative to perform switching of

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said third packets for establishing at least one
communication session.